

REMARKS

In the Office Action mailed on May 30, 2007, the Examiner rejected claims 6 – 17 under 35 U.S.C. § 103(a) as being obvious over US 2,800,709 (“Gaul”) in view of CN 1,105,615 (“Hu”).

In view of the following remarks, Applicants respectfully request reconsideration and withdrawal of all grounds of rejection.

Rejection of Claims 6 – 17 Under 35 U.S.C. § 103(a)

Claims 6 – 17 were rejected under 35 U.S.C. § 103(a) as being obvious over Gaul in view of Hu. The Office Action asserts that Gaul discloses producing an aluminum composite material. The Office Action states that Gaul does not disclose sawing the cladding layer from a first ingot made from a first aluminum in a longitudinal direction, the sawing comprising band sawing. Furthermore, the Office Action asserts that Hu discloses sawing a metal ingot in a longitudinal direction using a band saw. The Office Action concludes that it would be obvious to one of ordinary skill in the art at the time the invention was made to saw the layer of Gaul from an ingot in a longitudinal direction using a band saw as disclosed by Hu. Applicants respectfully traverse this basis of rejection.

Claim 6 recites in relevant part “sawing at least one cladding layer of a specified thickness suitable for use as a cladding layer from a first ingot made from a first aluminum material in a longitudinal direction ...”

Claim 14 recites in relevant part “sawing said aluminum cladding sheet from said first ingot in a longitudinal direction at a specified thickness suitable for use as a cladding sheet ...”

In contrast, Gaul discloses cladding of metal layers to form a composite by fixing the thinner metal layer to the ingot by tack welds prior to rolling in a hot mill (see Gaul column 4 lines 5 – 24 and column 4 lines 40 – 72). However, Gaul fails to teach or suggest methods of manufacturing the cladding layer. In particular, Gaul fails to teach or suggest “sawing at least one cladding layer ... from a first ingot made from a first aluminum material in a longitudinal direction.”

Hu fails to cure this deficiency because Hu discloses sawing steel ingots for cogging. Hu fails to teach or suggest “sawing at least one cladding layer ... from a first ingot made from a

first aluminum material in a longitudinal direction.” Steel is an alloy containing predominantly iron. The physical properties of steel such as melting point, malleability, etc. differ from light metals like aluminum. Therefore, even if a thin layer of steel can be cut using the technology of Hu, Hu does not teach or suggest that the steel has a specified thickness suitable for use as a cladding layer. Accordingly, Gaul or Hu either alone or in combination, fail to teach or suggest each and every element of independent claims 6 and 14.

Furthermore, there is no motivation to combine the teachings of Gaul and Hu. Gaul discloses making composites by cladding light metals such as aluminum and magnesium and their alloys (See Gaul column 5, lines 62 – 66). Hu discloses cogging steel ingots. As discussed above, the physical properties of light metals such as aluminum and magnesium disclosed by Gaul and those of steel disclosed by Hu differ. There is no teaching or suggestion that the tack welds of Gaul would be capable of affixing steel to another sheet of metal.

Furthermore, Gaul discloses that after tack welding, the sheets are rolled and that because of the nature of the thinner layer, it spreads considerably relative to the thicker layer (see Gaul column 4, line 70 – column 5, line 9 and column 5, lines 37 – 45). There is no expectation that steel acting as the thinner layer would spread considerably. Indeed, the opposite would be expected to occur. Because of the hardness of steel, a thicker layer of a softer lighter metal would be expected to spread more than a thinner layer of a hard metal such as steel. Therefore, one would not choose to combine a steel layer of Hu with the teachings of Gaul to form a composite material because there is no expectation of success.

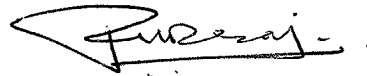
Even if the teachings were combined, the purpose of the invention of Gaul would no longer operate for its intended purpose, which is to form a composite material from a thin layer of metal and a thick layer of metal, where the thin layer spreads more relative to the thick layer of metal. Absent a teaching of why the combination of Hu with Gaul is a proper combination, Applicants respectfully submit that there is no reason to combine the teachings of the references.

In view of the foregoing, Applicants respectfully submit that independent claims 6 and 14 are patentable over Gaul in view of Hu. Furthermore, Applicants respectfully submit that claims 7 – 13 are allowable as depending from claim 6, and claims 15 – 17 are allowable as depending from claim 14. Accordingly, Applicants respectfully request that the rejection of claims 6 – 17 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

CONCLUSION

In view of the foregoing, Applicants respectfully submit that claims 6 – 17 are in condition for allowance and request favorable action. The Examiner is welcome to contact Applicants' agent at the number below with any questions.

Respectfully submitted,



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